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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,201	07/16/2003	Ronald J. Kelley	CM01568LD01	1076

7590 12/11/2003

Randi L. Dulaney
Motorola, Inc.
Law Department
8000 West Sunrise Boulevard
Fort Lauderdale, FL 33322

EXAMINER	
JACKSON, ANDRE K	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,201	KELLEY ET AL.	
	Examiner	Art Unit	
	André K. Jackson	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs and figures not mentioned in the description: 30,35,40,45,50,55,60,65,70,75,80 and 85; Figures 2-7. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs and figures in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following: Applicant has to disclose and describe the use of the immersion capacitive unit with the current invention. There is no explanation of how the current invention relates to the immersion capacitive unit.

   Appropriate correction is required.

Claim Objections

3. Claim 1 is objected to because of the following informalities:

Regarding claim 1, line 9 of the claim "immersion capacitive" should be --immersion capacitive unit-- since it is written this way in line 10.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 2 recite the limitation "the plates" in line 10 of the claims. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 2 recites the limitation "the supply of methanol" in line 9 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Wood.

Regarding claim 1, Hockaday discloses in "Surface replica fuel cell for micro fuel cell electrical power pack" a fuel cell (12) capable of

operating on hydrogen that is obtained from methanol (Column 16); a reservoir for storing a supply of methanol (Figure 13). What Hockaday does not disclose is where the fuel quantity measuring means is located within the reservoir; where the fuel quantity measuring means an immersion capacitive unit that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric. However, Wood discloses in "Capacitive liquid level sensor" which disclose where the fuel quantity measuring means is located within the reservoir and where the fuel quantity measuring means has an immersion capacitive unit that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric (Figure 1). Therefore, it would have been obvious one of ordinary skill in the art at the time the invention was made to modify Hockaday to include c where the fuel quantity measuring means is located within the reservoir and where the fuel quantity measuring means immersion capacitive unit that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric as taught by Wood. By adding this feature the artisan would be able to accurately detect the amount of liquid in the fuel cell.

Regarding claim 2, Hockaday discloses a fuel cell (12) capable of operating on hydrogen that is obtained from a liquid hydrocarbon fuel (Column 16); a reservoir for storing a supply of liquid hydrocarbon fuel

(Figure 13). What Hockaday does not disclose is where the fuel quantity measuring means is located within the reservoir; where the fuel quantity measuring means an immersion capacitive that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric. However, Wood discloses where the fuel quantity measuring means is located within the reservoir; where the fuel quantity measuring means an immersion capacitive that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric (Figure 1). Therefore, it would have been obvious one of ordinary skill in the art at the time the invention was made to modify Hockaday to include where the fuel quantity measuring means is located within the reservoir; where the fuel quantity measuring means an immersion capacitive that includes an electrical circuitry for measuring a capacitance value of the immersion capacitive unit produced using the dielectric as taught by Wood. By adding this feature the artisan would be able to accurately detect the amount of liquid in the fuel cell.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.J.

November 26,2003

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800